BEFORE THE Federal Communications Commission WASHINGTON, D.C.

In the Matter of)
Preserving the Open Internet) GN Docket No. 09-191)
Broadband Industry Practices) WC Docket No. 07-52

COMMENTS OF CHARTER COMMUNICATIONS ON THE FURTHER INQUIRY INTO TWO UNDER-DEVELOPED ISSUES

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EXECUTIVE SUMMARY

If net neutrality rules are adopted, there is a critical need to carefully limit their scope to preserve an enterprise zone for innovation – distinct from residential best-efforts Internet service – where IP specialized services can freely evolve in response to consumer demand and technical developments. Whenever new technology is introduced, the forward-looking few will see its promise, but many more will see foreboding change and predict consumer loss. Dire predictions have accompanied the introduction of the gramophone, radio, cable, the VCR, MP3s, and now specialized IP services. Every prediction has proven wrong. Every new technology has led to great consumer benefit.

The Commission itself has drawn comparable and instructive lessons as it abandoned earlier efforts to arrest changes in cable, satellite, and wireless technology, and instead (thankfully) allowed consumers to enjoy the benefits of innovation. In the early days, regulators were convinced that because television programming was widely distributed by broadcasters in "free" advertiser-supported form, they had to protect broadcasting to maximize programming. In time, the Commission realized it was wrong, stopped protecting markets from innovation, and cable operators were able to provide consumers with vastly expanded choices of basic and premium channels, far beyond the scale of broadcasting.

The Commission reached similar conclusions across the technology spectrum, freeing innovators and investors to offer consumers cable modem service, VoIP, DBS, Wi-Fi, and now White Spaces devices. Today, those who are trying to protect the "open Internet" from specialized services are trying to recreate the same barriers to innovation from which the Commission has had to extricate itself with every previous technology.

The scope of any net neutrality rule should be confined to mass market residential Internet access services that provide connection to substantially all published IP addresses. All other services, whether labeled specialized services, cable services, or IP equivalents of private carriage, should be outside of the rule. Unless the Commission intends to make it illegal for IP traffic to "bypass" the Internet – which would mean that no one could make a telephone call over the PSTN or receive IP content over a cable system – then it must accommodate multiple models for the delivery of IP data outside of the regulated "open Internet." It cannot accommodate the breadth of IP services unless it confines the scope of net neutrality rules to leave broad room for innovation. Under this approach, consumers can benefit from myriad IP specialized services, such as green appliances that come loaded with Kindle-style connectivity; government agencies can enjoy ultra-secure cloud computing; and the visions of the Broadband Business Services Notice, the National Broadband Plan, and the AllVid Inquiry can be achieved.

If there are to be new rules for broadband, they should apply to wireless as well as wired Internet access. Consumers should not be subject to radically different rules when they access the Internet from mobile rather than fixed points of access. Imposing non-discrimination requirements on wired but not wireless networks would mean that wireless providers could impress wired networks into service as their delivery vehicle for users and even machine to machine applications, but wired providers could not count on wireless to display their content on mobile devices as part of a cable quad play. This would not be a desirable consumer or competitive outcome.

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Charter Communications submits these comments in response to the Further Inquiry Into Two Under-Developed Issues. Charter is the nation's fourth largest cable company, serving 5.3 million customers. Charter supports the comments of the National Cable & Telecommunications Association and is submitting these additional comments separately to emphasize and elaborate on certain issues.

The Notice seeks additional comment on IP-based "managed" or "specialized" services that are provided over the same last-mile facilities as broadband Internet access service.

Generally, it asks "how to maintain the investment-promoting benefits of specialized services while protecting the Internet's openness." Some have argued that little or no leeway be given for specialized services. Much of the Notice presents an array of suggested regulatory constraints, based on deep suspicion of any IP connection not subject to net neutrality rules and a desire to constrain their development in order to protect the "open Internet" as we know it. For example, some proposals would confine specialized services to a narrow set of pre-approved applications,

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¹ Public Notice, Further Inquiry Into Two Under-Developed Issues in the Open Internet Proceeding, DA 10-1667 (Sept. 1, 2010) (the "Notice").

such as telemedicine.² Others would require all specialized services to be offered on a strict non-exclusive common carrier basis, more stringent than the Commission or Congress has ever imposed on the public switched telephone network (PSTN) or on cable network carriage.³

Charter proposes that the Commission instead preserve ample and unrestricted room for specialized IP-based services to evolve. If net neutrality rules are adopted, there is a critical need to preserve an enterprise zone for innovation – distinct from residential best-efforts Internet service – where IP specialized services can freely evolve in response to consumer demand and technical developments.

I. THE COMMISSION'S REGULATORY HISTORY DEMONSTRATES THAT CONSUMERS BENEFIT WHEN INNOVATIVE TECHNOLOGIES ARE GIVEN ROOM TO DEVELOP

Whenever new technology is introduced, the forward-looking few will see its promise, but many more will see foreboding change, predict consumer loss, and seek to preserve the technological status quo by law. Dire predictions have accompanied the introduction of the gramophone, radio, cable, the VCR, MP3s, and now specialized IP services. Every prediction has proven wrong. Every new technology has led to great consumer benefit. We submit that applying such a restrictive approach to specialized IP services will cause great harm to consumers and to the development of IP-based services.

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² Notice at 4 n.19.

³ Notice at 4 n. 18. The PSTN accommodates many different services: specialized individually negotiated (ICB) services; private carriage; and services not classified as carriage at all. Likewise, the Communications Act imposes no general rule that a cable operator may not chose to carry one programming service over another as part of its managed video offerings. There is instead a carefully constructed program carriage rule that prohibits coerced equity interests and favoritism to vertically integrated services, as well as a statutory prohibition against the Commission imposing common carriage obligations. *See* 47 U.S.C. §§ 536, 541(c).

⁴ Mark A. Lemley, *Is the Sky Falling on the Content Industries?*, Stanford Public Law Working Paper No. 1656485 (Aug. 10, 2010), *available at* Social Science Research Network http://ssrn.com/abstract=1656485.

The Commission itself has drawn comparable and instructive lessons as it abandoned earlier efforts to arrest changes in cable, satellite, and wireless technology, and instead (thankfully) allowed consumers to enjoy the benefits of innovation.

A. Consumers Gained Vastly Expanded Programming Choices When Cable Was Freed From Legacy Broadcasting and Telephony Constraints

In the early days of cable, regulators were convinced that because television programming was widely distributed by broadcasters in "free" advertiser-supported form, broadcasting was the best way to maximize programming, and the broadcast model had to be protected from pay television models. The Commission adopted "anti-siphoning" rules to stop cable networks and subscription services from buying programming that broadcasters might buy. It adopted "anti-leapfrogging rules" and quotas on the number of distant signals to restrict cable operators from offering willing consumers programming imported from distant markets. It did all of this in the name of protecting a broadcasting model that it thought was and would forever remain the best model for delivering value to consumers. But it was wrong. "Anti-siphoning" rules were quickly overturned in court as a First Amendment violation, 5 but the Commission reached its own economic and policy verdict on the remaining rules as it watched the consumer demand grow for accessing programming in new ways and in new subscription models. 6 The Commission stopped protecting markets from innovation, and instead allowed consumer demand to dictate what was delivered. The result: cable operators were able to provide consumers with vastly expanded choices of basic and premium channels, far beyond the scale of broadcasting.

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⁵ Home Box Office, Inc. v. FCC, 567 F.2d 9 (D.C. Cir. 1977).

⁶ Cable Television Syndicated Program Exclusivity Rules; Inquiry Into the Economic Relationship Between Television Broadcasting and Cable Television, FCC 80-443, 79 F.C.C.2d 663 (1979), aff'd, Malrite T.V. v. FCC, 652 F.2d 1140 (2d Cir. 1981).

Consumers have benefited repeatedly as the Commission relaxed rules and let demand drive markets. Charter upgraded cable plant and added programming when the micromanagement rules from the 1990s sunset. We deployed cable modem service widely when the Commission and courts freed broadband from franchising, cable, or carrier regulation. Charter is able to offer voice competition because VoIP is not compelled to labor under legacy monopoly regulations. As Charter was empowered to develop more products and revenue streams, we built better plant and extended it further. We invested in systems that were largely at 550 MHz and below, and built them into advanced broadband networks providing digital cable, high definition, video on demand, personal video recorders, broadband Internet service of up to 60 Mbps, and a choice in facility based voice providers. Charter alone has invested more in its systems and services than the entire broadband stimulus program. All this has happened because regulators were able to suspend doubts, relax the "prophylactic" regulations, and let industry actually deliver value to consumers in new ways. That approach has allowed us to build and operate intelligent networks, to embrace the Internet, and currently allows us to continue improving the broadband experience for consumers.

B. Consumers Gained Still More Choices When Satellite and Wireless Were Freed From Legacy Common Carriage and Spectrum Constraints

The same lesson is evident across the technology spectrum. When the Commission has been willing to trust in innovation, it has unleashed great value for consumers. Originally, satellite was seen as a common carrier offering in which the costs of high-risk satellite launches were supposed to be funded by at-cost transponder leases. When the Commission changed course and allowed satellite to be offered on a non-common carrier basis, blending content with

transport,⁷ the DBS industry emerged, produced new digital choices for consumers, and became a formidable competitor to cable. The Commission used to parcel out all spectrum licenses by uses and licensees. When it relaxed regulatory constraints on spectrum, Wi-Fi emerged. The same philosophy of letting consumer demand shape innovative spectrum use is the bedrock of the *White Spaces* order. We should not repeat earlier mistakes by trying to narrowly define and constrain specialized IP services.

II. ANY NET NEUTRALITY RULES SHOULD BE CONFINED TO RESIDENTIAL MASS MARKET INTERNET ACCESS SERVICE

Today, those who are trying to protect the "open Internet" from specialized services are trying to recreate the same barriers to innovation from which the Commission has had to extricate itself with every previous technology. The Internet and IP services are still evolving, and the Commission will frustrate consumers, innovation, and investment if it attempts to funnel all things IP into the "Internet as we know it."

With innovation and investment goals in mind, it is clear that the scope of any net neutrality rule should be confined to mass market residential Internet access services that provide connection to substantially all published IP addresses. All other services, whether labeled specialized services, cable services, or IP equivalents of private carriage, should be outside of the rule.

A. Not All IP Data Flows Over the "Open Internet"

Expansive net neutrality regulations embracing all IP data flows would not "preserve" either the status quo or the open Internet. In proposals to expand the scope of net neutrality, there seems to be an underlying assumption that all IP traffic flows over the open Internet, and is available by browsing. But this is not true today. Not every entity makes its IP address known.

⁷ See National Ass'n of Broadcasters v. FCC, 740 F.2d 1190 (D.C. Cir. 1984).

Not all "sites" are accessible. Not all IP data goes over the "open Internet." The Internet is evolving rapidly away from FTP and web browsing to application, video, peer-to-peer, and machine-to-machine models. Unless the Commission intends to make it illegal for IP traffic to "bypass" the Internet – which would mean that no one could make a telephone call over the PSTN or receive IP content over a cable system – then it must accommodate multiple models for the delivery of IP data outside of the regulated "open Internet." It cannot accommodate the breadth of IP services unless it confines the scope of net neutrality rules to leave broad room for innovation.

B. Allowing Innovation in Specialized IP Services Has Already Produced Consumer Benefits

To date, that latitude has created considerable consumer benefits. Consumers have an option of U-verse cable service because AT&T prioritizes its own IP video traffic. High quality content is rapidly accessible through content delivery networks (CDNs) that evolved to provide the quality of service that could not be provided under end-to-end principles. An opportunity to choose lower cost voice service is available from VoIP networks carrying IP. All of these services could have been derailed or delayed even longer if they had been subjected to the kind of regulatory constraint that the proposed rules suggest for Internet access. Billions of dollars in consumer savings would have been delayed or lost.

C. Continued Innovation in Specialized IP Services Promises Still More Consumer Benefits

Looking forward, consumers can benefit from myriad IP specialized services if they are allowed to develop. For example:

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⁸ See, e.g., Chris Anderson & Michael Wolff, *The Web Is Dead. Long Live the Internet*, Wired Magazine (Aug. 17, 2010), available at http://www.wired.com/magazine/2010/08/ff webrip/all/1.

- The Commission has acknowledged that "potential future offerings such as specialized telemedicine, smart grid, or eLearning applications" are not possible with best-efforts service.⁹
- LECs offer residential service, fractional DS1s, DS1s, DS3s, Sonet-based services, Frame Relay and Ethernet Services and Private lines. There should be no constraint on offering IP equivalents like Metro Ethernet, Dedicated Internet Access, and Managed VPNs.
- Appliance makers might want to arrange with a broadband provider for energy monitoring features in a refrigerator or other device to activate over the broadband network without the consumer needing to make individual arrangements with local broadband providers. Like the Kindle model, the appliance maker would pay the provider so that the device just works when the consumer plugs it in at low bit rate, without the need for a subscription.
- Stock research and trading firms could elect to use "certified" P2P clients over a managed IP network to ensure secure distribution.
- Banking and financial institutions could provide ultra secure connections to consumers.
- Government agencies could use secure cloud computing to manage applications or desktop clients remotely over the managed IP network. Training facilities could use the same approach.
- Trusted parties could proactively manage desktop security, software versioning and protection, or remote storage and backup for consumers using an IP network managed for security and trust.
- Priority services could be provided to the appropriate governmental, emergency or financial services staff to insure continued operation during emergencies.
- A video game company could market a game to consumers with features for extra
 performance (say a "power boost" in a video war game) that are pre-authorized with the
 consumer's local broadband provider. Like the Kindle, the game company could pay the
 provider for the added bandwidth or other QoS feature for the enhancement to work
 instead of having each individual consumer make the arrangement with its broadband
 provider.
- Content developers and providers could use a managed IP network for distribution to clients, in order to compete with Google's server farms, third party CDNs or the OpenEdge platform.

D. Allowing Innovation in Specialized IP Services Promotes Commission Policies

Confining net neutrality rules to mass market residential Internet access, and leaving

room for specialized IP services to evolve, will meet multiple Commission and public policies.

⁹ Preserving the Open Internet; Broadband Internet Practices, Notice of Proposed Rulemaking, FCC 09-93, 24 FCC Rcd. 13064 ¶ 150 (2009).

The Commission has acknowledged that innovation must come from both the Internet's edge and core. Comments in this docket include requests from small businesses seeking to partner with network operators to provide higher quality service with lower latency in order to compete with large providers that use private Internet connections with quality of service. Many have noted that the Internet is a "two-sided" market and that broadband providers must look to either endusers or edge service providers, or both, for revenue to run existing networks and to build next generation systems. Today, end-users pay these costs, however, this arrangement is not necessarily the most effective or fair means of financing networks. The Broadband Business Services Notice recognizes that more businesses will use the Kindle model of rolling pre-paid connectivity into devices and connected machine-to-machine networks; that wholesale and specialized models will emerge; and that QoS model is required for certain business applications. It is the vision of both the National Broadband Plan and the AllVid Inquiry that more content will be sourced in IP and delivered from multiple disparate servers to multiple devices over MVPD networks. As the Commission gains more information on the development of specialized services from many quarters, it will become increasingly evident that

¹⁰ *Id*. ¶ 47.

¹¹ See Comments of Association for Competitive Technology at 24-26. The ACT Comments describe Ustream's efforts to compete with Cisco. "Cisco's technology wins out because it runs over a private Internet connection running a WAN (Wide Area Network) with QoS. Because Ustream uses the public Internet, and therefore can only offer a 'best effort' solution, it will never compare to the Cisco offering. Unfortunately, the NPRM's proposed rules governing 'enhanced' services would preclude small businesses from cutting revenue sharing deals with carriers to provide any 'enhanced' service that would include a guarantee of higher quality service through lower latency on a specific network, buffered content hosted by the ISP, or anti-jitter features like packet prioritization. Ustream would be left out in the cold."

¹² See, e.g., Comments of Comcast Corp. at 13 n.37; Comments of AT&T Inc. at 135-36; Comments of Verizon, Attachment B, Declaration of Michael L. Katz ¶ 68 (hereinafter "Verizon Comments – Katz Decl.").

¹³ See Verizon Comments – Katz Decl. ¶ 5 (Professor Katz notes the Commission's unwarranted assumption that "a stylized and inaccurate perception of the current state of the Internet represents the best possible state for promoting consumer welfare now and in the future").

¹⁴ Public Notice, *Wireline Competition Bureau Seeks Comment On Business Broadband Marketplace*, WC Docket No. 10-188, DA 10-1743 (Sept. 15, 2010).

¹⁵ See Connecting America: The National Broadband Plan at 3 (2010); *In re Video Device Competition*, Notice of Inquiry, FCC 10-60, 25 FCC Red. 4275 ¶ 14 n.38 (2010).

IP specialized services do not rob the "open Internet" of "capacity," as some fear. ¹⁶ The Commission would create barriers to innovations in IP services, to the vision shown in contemporaneous Commission dockets, and to inventions yet unimagined, if it extended net neutrality rules to IP specialized services.

E. Allowing Innovation in Specialized IP Services Meets Statutory Requirements

Confining the scope of any net neutrality rule to mass market residential Internet service is also required by the Communications Act. Putting to one side the ample debate over the extent of Commission authority to adopt net neutrality rules under existing law, it is clear that the Communications Act distinguishes among services. Cable services remain cable services regardless of transmission media, and whether they are analog, QAM or IP. Congress has limited the Commission's authority, barring the Commission from "impos[ing] requirements regarding the provision or content of cable services," not expressly set forth in Title VI, ¹⁷ and prohibiting the Commission from imposing any type of common carrier regulation on a cable operator's provision of cable services. ¹⁸

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¹⁶ Notice at 2 n. 11. From the perspective of those who see change as foreboding, we understand the worry that somehow residential Internet access might be left behind if investments are made in IP specialized services. But the record shows that investment in new technology has not undermined cable offerings. Charter has poured investment into Internet and has also has vastly expanded choices of basic and premium channels and led to digital cable, high definition, video on demand, broadband Internet service of up to 60 Mbps, and a choice in voice. Charter continues to invest in DOCSIS 2 and upgrade speed even as we deploy DOCSIS 3. Internet resources and capacity are constantly in flux, dependent on transmission technologies, storage and computational capabilities. It is not a zero sum in which the growth of specialized services stunts the growth of other services.

¹⁷ See 47 U.S.C. § 544(f)(1) (bars "[a]ny Federal agency, State, or franchising authority" from "impos[ing]

requirements regarding the provision or content of cable services, except as expressly provided in [Title VI]").

See 47 U.S.C. § 541(c) ("Any cable system shall not be subject to regulation as a common carrier or utility by reason of providing any cable service.").

III. IF WIRELESS IS EXEMPTED, WIRED PROVIDERS COULD NOT COUNT ON WIRELESS TO DISPLAY THEIR CONTENT ON MOBILE DEVICES, BUT WIRELESS PROVIDERS COULD IMPRESS WIRED NETWORKS INTO SERVICE DELIVERY

The Commission also asks "how, to what extent, and when" openness principles should apply to mobile wireless platforms.

Internet. Consumers should not be subject to radically different rules when they access the Internet from mobile rather than fixed points of access. Users of "mobile" broadband rely on wired backhaul (for actual operation of the "wireless" network) and the expectation that a mobile user may connect to a wired server or user. "Wired" broadband users have the reciprocal expectation that they may connect to mobile users. As cable operators and other MVPDs increasingly offer their subscription video for enjoyment on mobile devices served by AT&T, Verizon or other wireless networks, it will be problematic if that video were to be blocked.

Imposing non-discrimination requirements on wired but not wireless networks would mean that wireless providers could impress wired networks into service as their delivery vehicle for users and even machine to machine applications, but wired providers could not count on wireless to display their content on mobile devices as part of a cable quad play. This would not be a desirable consumer or competitive outcome.

We understand that wireless works within defined spectrum, but all networks must engineer around capacity constraints. The use of spectrum is not a legitimate basis for granting a blank check for wireless to exempt itself from net neutrality principles applied to wired Internet access. Wireless providers already charge consumers remarkable rates for text data. Given an exemption, wireless providers could discriminate against cable video in favor of their own video

offerings. This kind of discrimination is anti-competitive and harms consumers. Just this year, the Commission finally corrected a similar mistake by eliminating the home roaming exclusion for voice and related services. It should not create another barrier to consumer enjoyment of mobile services. If there are to be new rules for broadband, they should apply to wireless and well as wired Internet.

IV. CONCLUSION

The Commission should draw on instructive lessons learned as it abandoned earlier efforts to arrest changes in cable, satellite, and wireless technology, and instead (thankfully) allowed consumers to enjoy the benefits of innovation. Those who are trying to protect the "open Internet" from IP specialized services are trying to recreate the same barriers to innovation from which the Commission has had to extricate itself with every previous technology. Rapid advances in technology and business models outside the realm of residential mass market Internet service should be encouraged free from regulation. Trying to regulate or to categorize these services will frustrate the very innovation and investment that will benefit consumers. The scope of any net neutrality rule should be confined by definition to mass market residential Internet access services that provide connection to substantially all published IP addresses, so that consumers can benefit from myriad IP specialized services that will emerge if innovators

and investors are left free to meet consumer demand.

Respectfully submitted,

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